



Vector-Borne Disease

2020 Weekly Surveillance Report

Iowa Department of Public Health | Center for Acute Disease Epidemiology | [West Nile Virus Website](#)

All data presented in this report are provisional and may change as additional reports are received

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West Nile Virus (WNV)

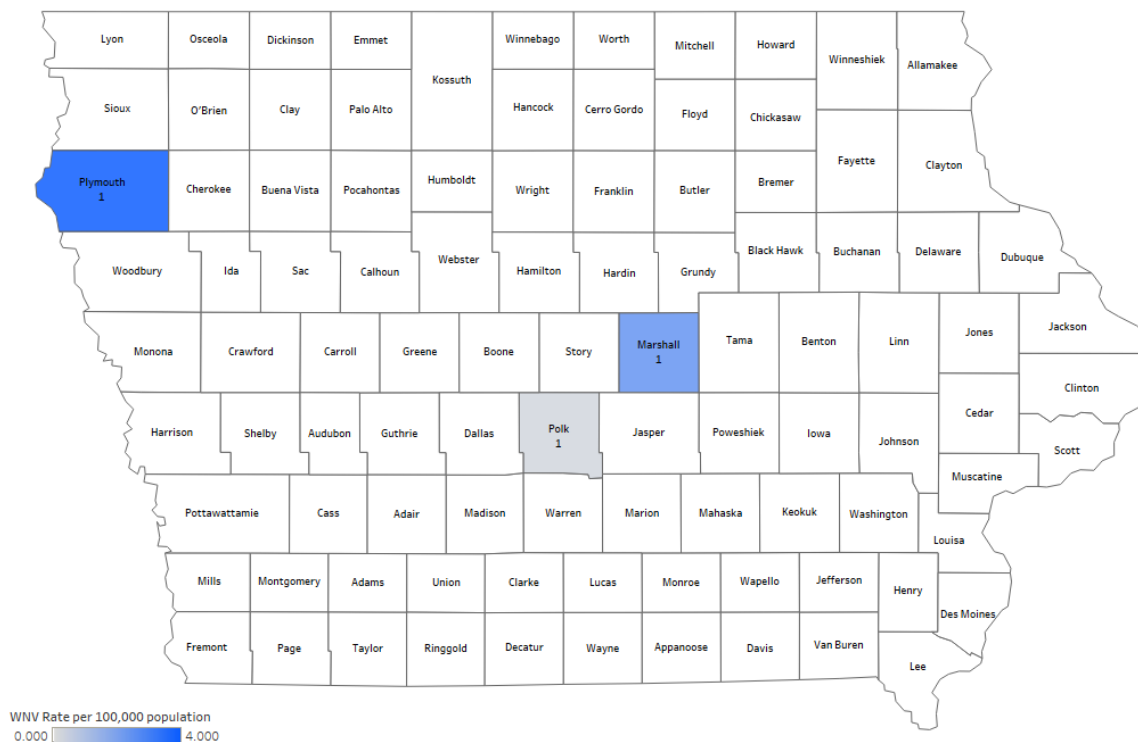
WNV is endemic in Iowa and activity usually peaks in late summer and early fall. IDPH works in collaboration with Local Public Health (LPH) and other appropriate partners to investigate all reported cases.

In 2019, five human cases were identified. Thus far in 2020, three human cases of WNV have been identified and 33 mosquito samples have tested positive for WNV [Table 1].

Table 1. Human /Equine Surveillance, 2020 Positive Samples

County	Human	Blood Donor	Horse	Mosquitoes				
				<i>Culex erraticus</i>	<i>Culex pipiens</i>	<i>Culex pipiens group</i>	<i>Culex restuans</i>	<i>Culex tarsalis</i>
Black Hawk	0	0	0	0	1	0	1	0
Fremont	0	0	0	0	0	1	2	0
Marshall	1	0	0	0	0	0	0	0
O'Brien	0	0	0	0	0	1	1	4
Plymouth	1	0	0	0	0	0	0	0
Polk	1	0	0	1	7	5	8	0
Woodbury	0	0	0	0	0	1	0	0
Total	3	0	0	1	8	8	12	4

Figure 1. 2020 West Nile virus case count and incidence rate by county of residence.



The graph displays the weekly number of cases from April to December for four years. The 2018 season is characterized by a major peak in late August/early September, while the other years show minimal activity with only a few small peaks.

Week of symptom onset	2017	2018	2019	2020
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	0	0	0
20	0	0	0	0
21	0	0	0	0
22	0	2	0	0
23	1	1	0	0
24	0	0	0	0
25	0	0	1	0
26	0	0	1	0
27	0	1	0	0
28	0	0	0	0
29	2	1	1	0
30	1	4	0	0
31	1	12	0	0
32	1	5	0	0
33	1	14	1	0
34	0	16	0	0
35	0	17	0	0
36	2	10	1	0
37	3	11	0	0
38	1	7	0	2
39	1	3	0	0
40	0	0	0	0
41	0	0	0	0
42	0	1	0	0
43	0	0	0	0
44	0	0	0	0
45	0	0	0	0
46	0	0	0	0
47	0	0	0	0
48	0	0	0	0
49	0	0	0	0
50	0	0	0	0
51	0	0	0	0
52	0	0	0	0

As of November 3rd, 373 counties from 43 states have reported WNV activity to ArboNET for 2020, including 36 states with reported WNV human infections (i.e., disease cases or viremic blood donors) and seven additional states with reported WNV activity in non-human species only (i.e., veterinary cases, mosquito pools, dead birds, or sentinel animals) [Figure 3].

One hundred and twelve WNV presumptive viremic donors have been reported from 14 states.

No WNV activity
 WNV human infections*
 Non-human WNV activity†

†WNV veterinary disease cases, or infections in mosquitoes, birds, or sentinel animals

Figure 4. WNV neuroinvasive disease incidence* reported to ArboNET, by state – United States, 2020 (as of November 3, 2020)

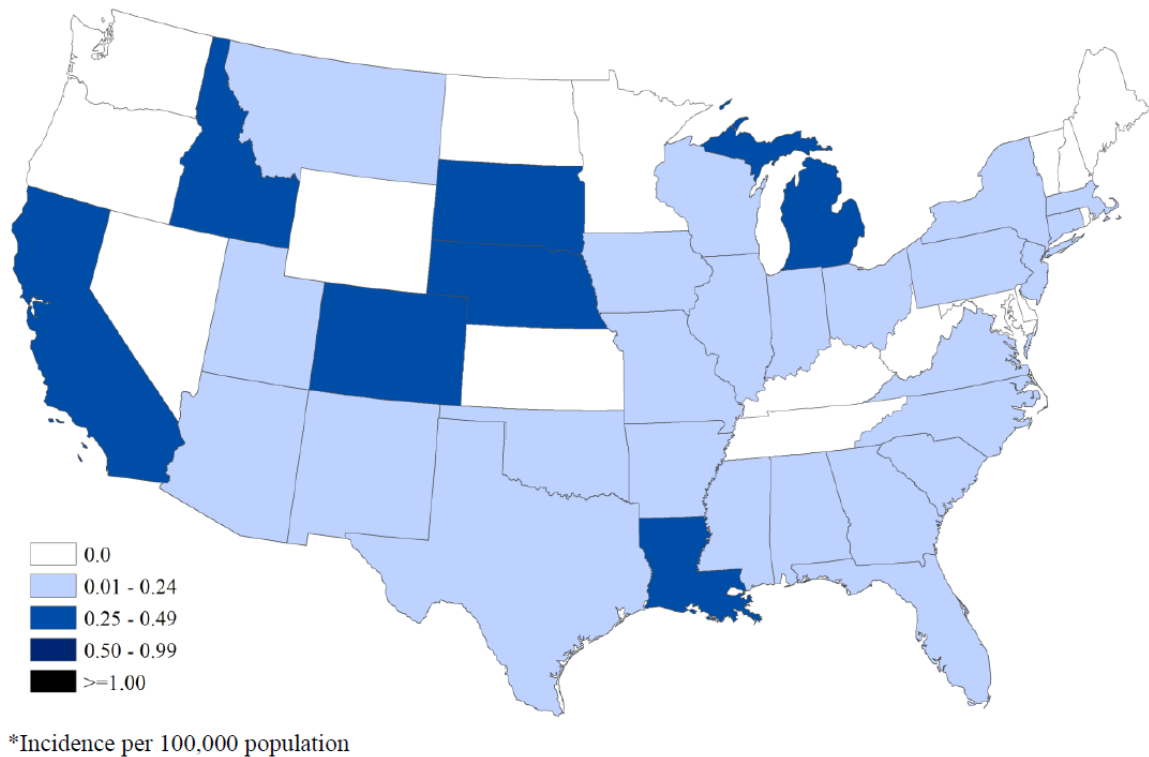
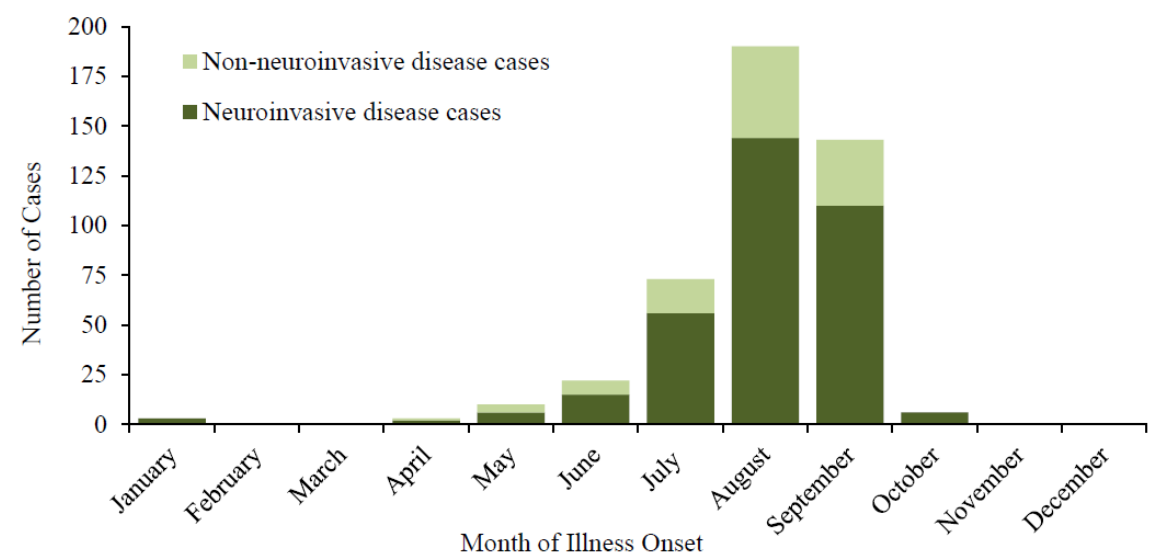


Figure 5. WNV disease cases reported to ArboNET, by month of onset*- United States, 2020 (as of November 3, 2020)



*Cases missing onset date (n=1)

Mosquito Surveillance

IDPH in collaboration with Iowa State University (ISU) and local public environmental health partners conducts ecological surveillance in 14 counties across the state by monitoring mosquitoes and testing for WNV infected populations.

Table 2. 2020 mosquitoes tested for West Nile virus

Species	# of Samples Tested	WNV Negative	WNV Positive
<i>Cx. erraticus</i>	6	5	1
<i>Cx. pipiens</i>	230	222	8
<i>Cx. pipiens</i> group	219	211	8
<i>Cx. tarsalis</i>	38	34	4
<i>Cx. restuans</i>	201	189	12
<i>Cx. territans</i>	20	20	0
<i>Cx. salinarius</i>	5	5	0
<i>Cx. species</i>	1	1	0
Total	720	687	33

Dengue Fever

Dengue is a disease caused by any one of four related viruses, which are passed by the bite of an infected *Aedes aegypti* or *Aedes albopictus* mosquito. Infection with one of the four viruses does not protect against the others and consecutive infections put people at greater risk of developing dengue hemorrhagic fever (DHF).

Dengue is not found in Iowa. Cases are in travelers and immigrants returning from parts of the world where dengue transmission occurs. One case of dengue has been reported in Iowa, thus far in 2020. In 2019, nine cases of dengue were reported to IDPH.

Malaria

Malaria is a serious and sometimes fatal disease caused by a parasite that commonly infects *Anopheles* mosquitoes. Malaria is spread to humans by the bite of the infected female mosquito. Only *Anopheles* mosquitoes can transmit malaria and they must have been infected through a previous blood meal taken from an infected person.

Three cases of malaria have been reported in Iowa. Cases are in travelers and immigrants returning from parts of the world where malaria transmission occurs. In 2019, 23 cases of malaria were reported to IDPH.

Rocky Mountain spotted fever (RMSF)

American dog ticks are carriers of *Rickettsia rickettsii*, the bacteria that causes RMSF. The American dog tick is the most common species of tick in Iowa and can be found in every county in the state. The tick is most active late March through August.

Four cases of RMSF have been reported in Iowa. In 2019, 11 cases of RMSF were reported to IDPH.

Ehrlichiosis/Anaplasmosis

There are at least three species of bacteria responsible for ehrlichiosis/anaplasmosis in the United States: *Ehrlichia chaffeensis*, *Ehrlichia ewingii*, and *Anaplasma phagocytophilum*. Ehrlichiae are transmitted by the bite of an infected lone star tick (*Amblyomma americanum*) which is found in Iowa. *A. phagocytophilum* is transmitted by the bite of an infected blacklegged tick (or deer tick, *Ixodes scapularis*) in Iowa. The clinical signs and symptoms of these infections are similar.

Eight cases of ehrlichiosis/anaplasmosis have been reported in Iowa. In 2019, 34 cases of ehrlichiosis/anaplasmosis were reported to IDPH.

Lyme

Lyme disease is caused by *Borrelia burgdorferi* and in Iowa is transmitted to humans by the bite of an infected tick, the blacklegged tick (or deer tick, *Ixodes scapularis*). Ticks are most likely to spread the Lyme disease bacterium during their pre-adult stage (nymph). They are most common between May and July and found in tall grasses and brush of wooded areas.

As of November 23rd, 118 confirmed and probable cases of Lyme disease have been reported in Iowa [Figure 6]. In 2019, 304 cases of Lyme disease were reported to IDPH.

Figure 6. 2020 Lyme disease case count and incidence rate by county of residence.

